"Sardinian," in N. 45° 39′, W. 47° 10′, passed several small pieces of ice; also in p. m. passed several icebergs; saw last iceberg in N. 45° 03′, W. 50° 17′.

4th.—S. S. "Main," in N. 42° 31′, W. 49° 45′, passed a large iceberg; also in N. 42° 15′, W. 51° 03′, passed some smaller ones; s. s. "Lord Gough," in N. 40° 56′, W. 47° 20′, passed a large iceberg.

5th.—Ship "Zambesi," sixteen miles east of Scatari, Cape Breton, struck heavy ice, stove bow, and sank in twenty minutes; ship "J. W. Wendt" passed close to an iceberg fifteen feet high and sixty feet long.

6th.—S. S. "State of Pennsylvania," in N. 41° 28′, W. 51° 50′, passed two icebergs; s. s. "Pavonia," in N. 41° 01′, W. 47° 27′, passed a large iceberg.

7th.—S. S. "Thornholme," in N. 43°, W. 50°, passed three icebergs; s. s. "Leerdam," in N. 45° 40′, W. 45° 12′, passed several large cakes of ice.

8th to 11th.—Ship "Festina Lente," near Bird Rock and Magdalen Islands, encountered much ice.

11th.—S. S. "Wyoming," in N. 42° 51′, W. 47° 33′, passed a large iceberg; also from N. 42° 25′, W. 51° 00′ to N. 42° 40′, W. 49° 53′, passed several icebergs.

13th.—S. S. "State of Florida," in N. 42° 23′, W. 49° 27′, passed an iceberg.

14th.—S. S. "Rotterdam," in N. 44° 15′, W. 46° 30′, passed two icebergs; also many small pieces of ice; s. s. "Landaff City," in N. 43° 45′, W. 48° 30′, passed an iceberg.

16th.—S. S. "California," in N. 42° 48′, W. 46° 53′, passed an iceberg; s. s. "Fulda," in N. 42° 37′, W. 48° 34′, passed a large iceberg.

17th.—S. S. "California," in N. 41° 55′, W. 52° 08′, passed an iceberg.

18th.—S. S. "Assyrian Monarch," in N. 45° 40′, W. 46° 00′, passed a large iceberg.

19th.—S. S. "Bothnia," in N. 42° 49′, W. 51° 46′, passed an iceberg; s. s. "Assyrian Monarch," in N. 45° 00′, W. 46° 49′, passed several icebergs.

20th.—S. S. "Jan Breydel," in N. 44° 19′, W. 48° 15′, passed two large icebergs.

21st.—S. S. "Adriatic," in N. 42° 35′, W. 48° 50′, passed an iceberg; also in N. 42° 06′, W. 52° 00′, passed another; s. s. "Cornwall," in N. 46° 00′, W. 45° 35′, passed a small iceberg about thirty feet high.

22d.—S. S. "Lord Gough," in N. 43° 00′, W. 46° 00′, passed two large icebergs.

25th.—S. S. "Pavonia," in N. 43° 42′, W. 47° 15′, passed an iceberg.

26th.—S. S. "De Ruyter," in N. 45° 25′, W. 48° 02′, passed two icebergs about two hundred feet high; s. s. "Pavonia," in N. 42° 32′, W. 52° 10′, passed an iceberg; also in N. 42° 44′, W. 50° 29′, passed three others; s. s. "Colina," in N. 48° 39′, W. 48° 22′, sighted four icebergs.

27th.—S. S. "Labrador," in N. 43° 10′, W. 51° 40′, passed two icebergs.

28th.—S. S. "Labrador," in N. 42° 55′, W. 52° 44′, passed two icebergs; s. s. "State of Nebraska," from N. 43° 01′, W. 49° 22′ to N. 42° 44′, W. 52° 04′, passed seven icebergs.

31st.—S. S. "Furnessia," in N. 43° 32′, W. 46° 03′, passed an iceberg; s. s. "Bohemia," in N. 43° 40′, W. 48° 00′, passed an iceberg.

No date.—Bark "Karl," in N. 40° 30′, W. 47° 00′, saw an iceberg twenty-five feet high and three hundred feet long; bark "Vasco da Gama," in N. 47° 40′, W. 50° 16′, passed about a dozen icebergs; ship "Christine," in N. 44° 00′, W. 49° 00′, saw an iceberg about four hundred feet high.

TEMPERATURE OF THE AIR.

[*Expressed in degrees, Fahrenheit.*]

The distribution of mean temperature over the United States and Canada, for the month of May, 1883, is exhibited on chart iii., by the dotted isothermal lines.

The general distribution of mean temperature during the month of May, and the districts of maximum departures from the May normal of each year, since 1873, are as follows:

Districts.	Maximum departures.	Year.	Remarks.
	°		
		1873	Above the normal over northern Michigan, Lake Huron, southern Ohio, Kentucky, Tennessee, and eastern Massachusetts; below the normal in Kansas, Missouri, Minnesota, Wisconsin, Indiana, Illinois, the lower lake region, and throughout the Atlantic and Gulf states.
Missouri valley	+ 4.6	1874	Below the normal on the Atlantic coast; above the normal north of the Ohio and Missouri rivers: normal in the Gulf states and on the Pacific coast.
Upper Mississippi valley	+ 3.6		
Minnesota	+ 3.4		
South Atlantic states	− 2.6		
Saint Lawrence valley	− 4.8	1875	Below the normal in the Saint Lawrence valley, along the Atlantic coast, in the upper lake region, Mississippi valley, and on the Pacific coast; above the normal in the lower lake region, Gulf states, and Missouri valley.
Pacific coast	− 1.2		
Lower lakes	+ 2.7		
Gulf states	+ 1.2		
Saint Lawrence valley	− 3.8	1876	Normal in the middle Atlantic and Gulf states and upper Mississippi valley; above the normal in the Ohio and Missouri valleys, Minnesota, and lake region; below the normal in the Saint Lawrence valley, New England, south Atlantic states, and on the Pacific coast.
Pacific coast	− 2.1		
Lower lakes	+ 2.5		
Missouri valley	+ 2.0		
South Atlantic states	− 3.7	1877	Normal in the lower lakes, upper Missouri, upper Mississippi, and Saint Lawrence valleys; above the normal in Minnesota, the upper lakes, and New England; below the normal along the Gulf, middle, and south Atlantic coasts, and also on the Pacific coast.
Ohio valley	− 2.4		
Minnesota	+ 2.2		
Upper lakes	+ 2.2		
Missouri valley	− 4.6	1878	Normal in the lake region; below the normal in the Missouri, upper Mississippi, Ohio, and Saint Lawrence valleys; above the normal on the Atlantic, Gulf and Pacific coasts.
Upper Mississippi valley	− 4.4		
Minnesota	− 3.3		
New England	+ 1.7		
South Atlantic states	+ 1.7		
Eastern slope	+ 4.3	1879	Above the normal in all districts east of the Rocky mountains, except 1°.5 below the normal in Florida; below the normal on the Pacific coast, in Arizona, Nevada, and Idaho.
Northern slope	+ 3.0		
Boise City, Idaho	− 6.2		
Umatilla, Oregon	− 4.2		
Tucson, Arizona	− 3.6		
Middle Atlantic states	+ 7.4	1880	Above the normal in the middle slope, west Gulf states, and in the districts east of the Missouri and lower Mississippi rivers, except Florida; below the normal in the northern and southern slopes, and west of the Rocky mountains, except on the middle Pacific coast.
Upper lakes	+ 6.6		
Upper Mississippi valley	+ 5.3		
Ohio valley	+ 5.1		
Northern plateau	− 5.9		
North Pacific	− 3.8		
Upper Mississippi valley	+ 6.2	1881	Above the normal over the entire country, except normal in Florida, and slightly below normal in the Rio Grande valley and southern slope.
Minnesota	+ 4.8		
Upper lakes	+ 4.0		
Salt Lake City, Utah	+ 4.1		
Rio Grande valley	− 2.2		
Southern slope	− 0.5		
Upper Mississippi valley	− 8.2	1882	Normal in the middle and north Pacific coast regions; slightly above the normal in Florida; decidedly below the normal in all other districts.
Missouri valley	− 7.2		
Ohio valley	− 6.6		
Saint Lawrence valley	− 6.4		
Florida	+ 0.5		

The following are some of the extreme monthly mean temperatures reported from Signal-Service stations:

Stations reporting highest.	°	Stations reporting lowest.	°
Eagle Pass, Texas	81.7	Pike's Peak, Colorado	19.5
Uvalde, Texas	79.7	Mount Washington, New Hampshire	34.0
Key West, Florida	79.5	Deadwood, Dakota	43.3
Fort Stockton, Texas	76.6	Marquette, Michigan	44.0
Indianola, Texas	76.2	Alpena, Michigan	44.6
Galveston, Texas	75.6	Mackinaw City, Michigan	44.7
Punta Rassa, Florida	75.3	Escanaba, Michigan	45.1
Brackettville, Texas	75.1	Duluth, Minnesota	45.5
Cedar Keys, Florida	75.1	Saint Vincent, Minnesota	45.8
Yuma, Arizona	74.4	Cheyenne, Wyoming	46.3
New Orleans, Louisiana	74.3	Eastport, Maine	47.4
Sanford, Florida	74.0	Fort Washakie, Wyoming	47.8

The mean temperature of May, 1883, compared with the normal, as determined from the Signal-Service records, shows the month to have been colder than the average May, in nearly all districts. In the Rio Grande valley, and north Pacific coast region the mean temperature is 1°.1 above the normal; in the middle Atlantic states, the departure above the normal is but 0°.1; and a normal condition is reported from the northern plateau. With the exception of the above districts, the mean temperature is below the normal in all other parts of the country. In New England, the deficiency is very slight, being only 0°.3, but marked departures occur in the northern districts from the lake region westward to the Rocky Mountains. The

extreme northwest, upper Mississippi and Missouri valleys are the districts of greatest deficiency. Over this area the departure from the normal temperature has averaged 6°.5, while in California, the south Atlantic states, and Florida, the departures below the normal vary from 1°. to 1°.7.

In the first column of the following table is shown the mean temperature of May in previous years for the several districts, as determined from observations made at the Signal-Service stations; the second column shows the mean temperature of May, 1883, and the third column shows the departure of May, 1883, from the normal.

Average Temperatures for May, 1883.

Districts.	Average for May. Signal Service observations.		Comparison of May, 1883, with the average for several years.
	For several years.	For 1883.	
	°	°	°
New England	55.1	54.8	0.3 below.
Middle Atlantic states	61.4	61.5	0.1 above.
South Atlantic states	70.0	68.9	1.1 below.
Florida peninsula	77.0	76.0	1.0 below.
Eastern Gulf	73.3	70.6	2.7 below.
Western Gulf	74.4	72.3	2.1 below.
Rio Grande valley	77.7	78.8	1.1 above.
Tennessee	69.6	66.2	3.4 below.
Ohio valley	65.9	62.1	3.8 below.
Lower lakes	56.2	51.6	4.6 below.
Upper lakes	52.6	47.5	5.1 below.
Extreme northwest	54.1	47.6	6.5 below.
Upper Mississippi valley	63.9	57.8	6.1 below.
Missouri valley	62.4	55.5	6.9 below.
Northern slope	53.9	49.2	4.8 below.
Middle slope	60.6	58.5	2.1 below.
Southern slope	73.4	73.0	0.4 below.
Northern plateau	54.9	55.0	0.1 above.
Middle plateau	57.0	55.0	2.0 below.
Southern plateau	68.6	65.2	3.4 below.
North Pacific	54.9	55.8	0.9 above.
Middle Pacific	62.6	61.2	1.4 below.
South Pacific	67.2	65.5	1.7 below.
Mount Washington, N. H	33.5	34.0	0.5 above.
Pike's Peak, Colo	22.5	19.5	3.0 below.

DEVIATIONS FROM MEAN TEMPERATURE.

The departures exhibited by the reports from the regular Signal-Service stations are shown in the table of average temperatures for May, 1883. Voluntary observers report the following notes in connection with this subject:

California.—Mr. S. H. Gerrish, of Sacramento, reports the mean temperature at that place to have been the lowest recorded during May, since 1860.

Illinois.—Mattoon, Coles county: mean temperature, 61°, is 4°.2 below the May average of the last four years. Anna, Union county: mean temperature, 64.7, is 2°.7 below the May average of the last eight years. Riley, McHenry county: mean temperature, 52°.4, is 4°.6 below the May average of the last twenty-two years. Swanwick, Perry county: mean temperature, 60°.3, is 6°.7 below the May average.

Indiana.—Vevay, Switzerland county: mean temperature, 64°.6, is about the May normal for the past eight years. The mean temperature of the spring season ending May 31, 1883, is 54°.32, or 11°.12 below the average of the corresponding periods for the last eight years.

Wabash, Wabash county: mean temperature, 58°.5 is 3°.1 below the May average of the last seven years.

Logansport, Cass county: mean temperature, 61°.8 is 2°.9 below the May mean of the last twenty-four years. The monthly extremes are: maximum, 89°; minimum, 40°. The May extremes for the last twenty-four years are: maximum, 99° in 1870 and 1881; Minnimum, 28° in 1876 and 1877.

Iowa.—Muscatine, Muscatine county: mean temperature, 56°.2, is 4°.8 below the May average of the last forty-four years.

Kansas.—Lawrence, Douglas county: mean temperature, 62°.0 is 4°.1 below the mean of the last fifteen years. The extremes for the month are: maximum, 91°; minimum, 39°. The extremes for the past fifteen years are: maximum, 95° in 1874, '75 and '80; minimum, 30° in 1875. Yates Centre, Woodson county: mean temperature, 61.8, is 2°.8 below the mean of the past three years. Independence, Montgomery county: mean temperature, 62°.9, is 3°.6 below the May average of the last twelve years. The monthly mean of that period, 72°, occurred in 1880, the lowest, 60°.8, occurred in 1872.

Wellington, Sumner county: mean temperature, 61°.0, or 4°.8 below the May average of the last four years.

Maine.—Gardiner, Kennebec county: mean temperature, 52°.1, is 1°.4 below the May average of the last forty-seven years.

Maryland.—Fallston, Harford county: mean temperature, 60°.9, is 0°.6 below the May average of the last twelve years. The highest May mean of that period, 67°.5, occurred in 1880; the lowest 55°.6, occurred in 1876.

Michigan.—Thornville, Lapeer county: mean temperature, 54°, is 5° below the May normal for a long period.

Missouri.—See report of Professor Nipher, Director of the "Missouri Weather Service," under "notes and extracts."

New York.—Palermo, Oswego county: mean temperature, 51°.8, is 3° below the May mean of the last thirty years. The highest May mean of that period, 60°.7, occurred in 1880; the lowest, 47°.5, occurred in 1867.

North Volney, Oswego county: mean temperature, 52°.2, is 2°.9 below the May mean of the last sixteen years.

Nevada.—Carson City, 2d, 3d, 7th, 9th, 14th, 15th, 16th, 18th; Pioche, 2d, 3d.

Ohio.—Wauseon, Fulton county: mean temperature, 52°.7, is 6°.6 below the May mean of the last thirteen years. During that period the highest May mean, 64°.3, occurred in 1880; the lowest, 52°.2, occurred in 1882.

Texas.—New Ulm, Austin county: mean temperature, 73°.6, is 1°.2 below the May average of the last eleven years. During that period the highest May mean, 77°.4, occurred in 1879; the lowest, 73°.2, occurred in 1877.

Vermont.—Woodstock, Windsor county: mean temperature, 54°.3, is 0°.3 above the May average of the last sixteen years. The highest May mean of that period, 61°.2, occurred in 1880; the lowest, 50°.1, occurred in 1873.

Virginia.—Variety Mills, Nelson county: mean temperature, 64°.4, is 0°.8 below the May mean of the last six years.

Wytheville, Wythe county: mean temperature, 61°.2, is 0°.4 below the mean of a period of twenty years.

West Virginia.—Helvetia, Randolph county: mean temperature, 58°.5, is 0°.2 above the May average of the last seven years.

MONTHLY RANGES OF TEMPERATURE.

The monthly ranges of temperature for May, were smallest in southern Florida, and along the coasts of Rhode Island, North Carolina, and Texas, where they have varied from 20° at Key West, Florida, to 29° at Indianola, Texas, and Point Judith, Rhode Island. They have been greatest in Arizona, the largest monthly range, 82°, being reported from San Carlos. The following are the smallest monthly ranges reported: Key West, Florida, 20°; Galveston, Texas, 24°; Block Island, Rhode Island, 27°; Hatteras and Portsmouth, North Carolina, 28°; Indianola, Texas, and Point Judith, Rhode Island, 29°; Macon, North Carolina, and Punta Rassa, Florida, 30°; New Orleans, Louisiana, and Cape May, New Jersey, 31°; Pike's Peak, Colorado, 33°; New London, Connecticut, and Smithville, North Carolina, 34°; Barnegat City, New Jersey, 35°. The largest are: San Carlos, Arizona, 82°; Phœnix, Arizona, 66°; Smithville, and Tobacco Garden, Dakota, and Terry's Landing, Montana, 65°; Billings and Deer Lodge, Montana, Wickenburg, Arizona, and Visalia, California, 63°; Fort Custer, Montana, and Fort Buford, Dakota, 62°; Fort Apache and Tucson, Arizona, and Yankton, Dakota, 61; Los Angeles, California, Yuma and Prescott, Arizona, 60°.

The greatest daily ranges of temperature have varied in the different districts as follows:

New England.—From 20° at Block Island, Rhode Island, on the 18th, to 32° at Boston, Massachusetts, on the 7th.

Middle Atlantic states.—From 21° at Barnegat City, New Jersey, on the 24th, to 37° at Lynchburg, Virginia, on the 4th.

South Atlantic states.—From 18° at Hatteras, North Carolina, on the 10th, to 35° at Augusta, Georgia, on the 25th.

Florida Peninsula.—From 15° at Key West, on the 1st, to 30° at Sanford, on the 20th.

Eastern Gulf.—From 19° at New Orleans, Louisiana, on the 20th, to 33° at Mobile, Alabama, on the 23d.

Western Gulf.—From 15° at Galveston, Texas, on the 5th, to 39° at Fort Smith, Arkansas, on the 7th.

Ohio valley and Tennessee.—From 29° at Cincinnati, Ohio, on the 7th, to 38° at Knoxville, Tennessee, on the 24th.

Lower lakes.—From 32° at Detroit, Michigan, on the 1st, to 42° at Rochester, New York, on the 10th.

Upper lakes.—From 24° at Milwaukee, Wisconsin, on the 18th and 20th, to 32° at Mackinaw City, Michigan, on the 19th, and at Alpena, Michigan, on the 20th and 23d.

Extreme northwest.—From 34° at Bismarck, Dakota, on the 9th, to 42° at Fort Buford, Dakota, on the 21st.

Table of Comparative Maximum Temperatures for the Month of May.

State or Territory.	Maximum for May, 1883, Signal Service.		Highest since Signal-Service stations were opened—3 to 12 years.			Highest from any other source.			Length of Record.
	Station.	Temp.	Station.	Temp.	Year.	Place.	Temp.	Year.	
		°		°			°		
Alabama	Montgomery	91	Mobile	98	1878	Mount Vernon Arsenal	102		34 years.
Do	Mobile	90	Montgomery	98	1875				
Arizona	Yuma	109	Maricopa Wells	105	1870	Fort Verde	111		12 "
Do	Phœnix	107	Tucson	106	1881	Fort Mojave	110		11 "
Arkansas	Fort Smith	93	Little Rock	91	1880	Washington, near	94		28 "
Do	Little Rock	87				Fort Smith	93		21 "
California	Visalia	101	Los Angeles	97	'79,'80	Fort Miller	113		14 "
Do	Los Angeles	100	Visalia	97	'78,'79				
Colorado	Denver	79	Denver	92	1874	Fort Lyon	99	1880	23 "
Connecticut	New Haven	78	New Haven	89	1880	New Haven	93		86 "
Do	New London	73	New London	89	1881				
Dakota	Yankton	89	Fort Sully	101	1874	Fort Abercrombie	102		19 "
Do	Tobacco Garden	83	Pembina	96	1874	Fort Randall	101		23 "
Delaware	Delaware Breakwater	80	Delaware Breakwater	89	1880	Fort Delaware	91		45 "
Do						Dover	94	1880	7 "
District of Columbia	Washington	90	Washington	96	1880	Washington	96		59 "
Florida	Sanford	93	Jacksonville	98	1874	Houston	100	'79,'80	4 "
Do	Pensacola	90				Okahumpka	99	1879	4 "
Georgia	Savannah	94	Augusta	100	1878	Oglethorpe Barracks	97	1878	40 "
Do	Atlanta	84	Tybee Island	99	1878				
Idaho	Eagle Rock	80	Boisé City	88	1881	Fort Lapwai	101		18 "
Do			Lewiston	88	1879				
Illinois	Springfield	87	Cairo	92	1874	Chicago	98		38 "
Do	Chicago	80				Mattoon	98	1876	2 "
Indiana	Indianapolis	83	Indianapolis	89	'74,'81	Logansport	99	1881	2 "
Do						Vevay	98		13 "
Indian Territory	Fort Supply	92	Fort Sill	97	1880	Fort Arbuckle	100		20 "
Do			Fort Gibson	94	'74,'80	Fort Gibson	99		47 "
Iowa	Dubuque	84	Dubuque	94	1874	Boonsborough	96	1880	4 "
Do	Keokuk	84	Des Moines	93	1880	Nora Springs	96	1876	6 "
Do						Glenwood	96	1880	1 "
Kansas	Leavenworth	89	Dodge City	98	'79,'80	Fort Larned	99		18 "
Do			Leavenworth	94	'74,'75	Fort Riley	99		23 "
Kentucky	Louisville	87	Louisville	93	1881	Newport Barracks	90		29 "
Do						Bowling Green	90	1880	3 "
Louisiana	Shreveport	95	Shreveport	101	1875	Baton Rouge	99		56 "
Maine	Portland	73	Portland	94	1880	Brunswick	98		53 "
Maryland	Baltimore	86	Baltimore	95	1881	Fort Washington	97		38 "
Do	Ocean City	79				New Market	98	1877	3 "
Massachusetts	Boston	88	Boston	97	1880	Somerset	97	1880	7 "
Do	Provincetown	74				Williamstown	95		60 "
Michigan	Mackinaw City	80	Marquette	95	1874	Detroit	94		38 "
Do	Escanaba	70				Ontonagon	94		11 "
Minnesota	Saint Paul	75	Saint Paul	94	1874	Fort Ripley	101		16 "
Mississippi	Vicksburg	91	Vicksburg	95	'74,'77	Brookhaven	98	1875	5 "
Missouri	Saint Louis	90	Saint Louis	93	1874	Corning	100	1875	7 "
Do						Saint Louis	97	1878	40 "
Montana	Deer Lodge	87	Fort Keogh	98	1881	Fort Shaw	98		13 "
Nebraska	North Platte	87	North Platte	94	1880	Fort McPherson	100	1879	
Do	Omaha	87							
Nevada	Pioche	84	Winnemucca	80	1881	Camp Halleck	104		11 "
New Hampshire	Mount Washington	61	Mount Washington	62	'79,'81	Auburn	90	1881	5 "
Do						Grafton	96	1880	2 "
New Jersey	Sandy Hook	84	Sandy Hook	93	1880	New Lisbon	101	1880	1 "
Do	Little Egg Harbor	78				New Brunswick	98	1880	5 "
New Mexico	Fort Bayard	85	La Mesilla	101	'79,'81	Fort McRae	109		11 "
Do	Santa Fé	78				Fort Craig	108		25 "
New York	Rochester	84	New York City	94	1880	West Point	101	1880	55 "
Do	Oswego	84	Oswego	94	1879	Newberg	98		40 "
North Carolina	Kittyhawk	86	Wilmington	95	1878	Weldon	100	1880	7 "
Do	Charlotte	86	Kittyhawk	93	1880	Fort Johnson	92		57 "
Ohio	Cincinnati	85	Cincinnati	94	'74,'75	Cincinnati	96	'77,'81	
Do	Columbus	85				Marietta	94		53 "
Oregon	Portland	84	Umatilla	92	1878	Fort Dalles	90		15 "
Do	Roseburg	84							
Pennsylvania	Pittsburg	90	Philadelphia	96	1880	Philadelphia	98	1880	120 "
Do	Erie	84	Pittsburg	95	1881	Milton	100	1881	2 "
Rhode Island	Narragansett Pier	75	Newport	85	1881	Providence	91		35 "
Do						Fort Adams	91	1880	40 "
South Carolina	Charleston	91	Charleston	94	1878	Charleston	94		105 "
Do						Aiken	97	1881	6 "
Tennessee	Memphis	87	Memphis	96	1879	Humboldt	98		4 "
Do	Chattanooga	87				Ashwood	96	1879	3 "
Texas	Eagle Pass	109	Eagle Pass	116	1879	Ringgold Barracks	123	1879	32 "
Do	Uvalde	105	Uvalde	113	1879	Camp Stockton	111		15 "
Utah	Salt Lake City	83	Salt Lake City	91	1874	Camp Douglas	91		16 "
Do						Mount Carmel	96.4	1876	3 "
Vermont			Burlington	91	1880	Charlotte	96	1878	7 "
Do						Lunenburg	88		16 "
Virginia	Cape Henry	91	Norfolk	98	1880	Alexandria	96		12 "
Do	Lynchburg	90	Lynchburg	96	1881	Accotink	97	'80,'81	6 "
Washington	Dayton	82	Dayton	90	1880	Fort Walla Walla	99		14 "
West Virginia			Morgantown	91	1875	Weston	100	1877	2 "
Do						Helvetia	90	1877	5 "
Wisconsin	La Crosse	78	La Crosse	96	1874	Embarras	98		14 "
Wyoming	Cheyenne	82	Cheyenne	88	1874	Fort Laramie	98		27 "

Table of Maximum and Minimum Temperatures for May, 1883.

State or Territory.	Signal Service.			U. S. Army Post Surgeons, or Voluntary Observers.		
	Station.	Max.	Min.	Station.	Max.	Min.
		°	°		°	°
Alabama	Mobile	96	47	Demopolis	94	39
Do	Montgomery	91	44	Birmingham	90	31
Arizona	Yuma	109	49	Maricopa	105	00
Do	Fort Apache	90	29	Fort Bowie	92	44
Arkansas	Fort Smith	93	45	Brinkley	89	33
Do	Little Rock	87	44	Mount Ida	86	32
California	Visalia	101	38	Indio	111	53
Do	Los Angeles	100	40	Kingsburg	108	38
Do				Cisco	78	21
Colorado	Denver	79	32	Fort Lyon	92	32
Do	Pike's Peak	36	3	Fort Garland	75	19
Connecticut	New Haven	78	34			
Dakota	Yankton	89	28	Fort Sully	86	31
Do	Tobacco Garden	83	18	Fort Meade	84	20
Delaware	Del. Breakwater	80	43			
District of Columbia	U. S. Signal Office	90	43	Rock Creek Bridge	92	50
Florida	Sanford	93	51	Live Oak	95	40
Do	Pensacola	90	47	Waldo	97	46
Georgia	Savannah	94	51	Way Cross	97	42
Do	Atlanta	84	40	Madison	91	31
Idaho	Eagle Rock	80	26			
Illinois	Springfield	87	34	Bunker Hill	90	28
Do	Chicago	80	36			
Indiana	Indianapolis	83	35	Mitchell	90	44
Do				Glenwood	80	30
Indian Territory	Fort Supply	92	40	Fort Reno	89	40
Iowa	Dubuque	84	32	Logan	90	34
Do	Keokuk	84	38	Muscatine	84	31
Kansas	Leavenworth	89	39	Clay Centre	96	42
Do				Yates Centre	88	35
Kentucky	Louisville	87	37	Bowling Green	87	38
Louisiana	Shreveport	95	49	Franklin	100	48
Do	New Orleans	88	56	Coushatta	93	44
Maine	Portland	73	37	Cornish	84	36
Do	Eastport	69	33			
Maryland	Baltimore	86	45	Great Falls	88	45
Do	Ocean City	79	40	Sandy Springs	87	37
Massachusetts	Boston	88	37	Charlestown	89	36
Do	Provincetown	74	38	Williamstown	74	26
Michigan	Mackinaw City	80	28	Thornville	84	34
Do	Escanaba	70	27	Fort Brady	75	25
Minnesota	Saint Paul	75	34	Fort Snelling	81	33
Do	Moorhead	72	23	Northfield	72	32
Mississippi	Vicksburg	91	47	Aberdeen	88	30
Do	Starkville	87	40	Meridian	95	38
Missouri	Saint Louis	90	37	Archie	100	38
Do				Centreville	84	30
Montana	Deer Lodge	87	24	Fort Ellis	73	15
Do	Terry's Landing	81	10	Fort Maginnis	72	13
Nebraska	North Platte	87	31	Utica	95	32
Do	Omaha	87	38	Table Rock	93	30
Nevada	Pioche	84	25	Boca	88	28
Do				Wadsworth	96	32
New Hampshire	Mount Washington	61	11	Grafton	83	23
New Jersey	Sandy Hook	84	40	Newark	86	38
Do	Little Egg Harbor	78	39	Vineland	84	34
New Mexico	Fort Bayard	85	34	Lordsburg	98	50
Do	Santa Fé	78	31	Fort Union	85	21
New York	Rochester	84	32	North Volney	86	35
Do	Oswego	84	36	Johnstown	86	26
North Carolina	Kittyhawk	86	47	Wadesborough	92	40
Do	Charlotte	86	40	Lenoir	85	30
Ohio	Cincinnati	85	55	College Hill	90	40
Do	Toledo	80	32	Wauseon	83	27
Oregon	Portland	84	40	Albany	80	44
Do	Roseburg	84	37	Eola	77	40
Pennsylvania	Pittsburg	90	39	Chambersburg	87	44
Do	Erie	84	32	Grampian Hills	86	28
Rhode Island	Narragansett Pier	75	36	Saint Matthew	96	40
South Carolina	Charleston	91	48	Florence	99	33
Tennessee	Memphis	87	41	Milan	90	38
Do	Chattanooga	87	42	Brownsville	89	38
Do	Knoxville	86	37	Paris	88	38
Texas	Eagle Pass	109	56			
Do	Uvalde	105	54			
Do	Fort Elliott	88	39			
Utah	Salt Lake City	83	33	Ogden	92	36
Do				Coalville	70	16
Vermont				Charlotte	87	39
Do				Strafford	84	30
Virginia	Cape Henry	91	46	Johnsontown	93	51
Do	Chincoteague	78	42	Wytheville	81	36
Washington	Dayton	82	34	Fort Spokane	80	31
Do	Colfax	80	32			
West Virginia				Helvetia	88	34
Wisconsin	La Crosse	78	31	Beloit	84	32
Wyoming	Cheyenne	82	25	Fort Bridger	73	18
Do	Fort Washakie	79	20	Fort Washakie	80	18

Upper Mississippi valley.—From 24° at Cairo, Illinois, on the 7th, to 35° at Dubuque, Iowa, on the 23d.

Missouri valley.—From 35° at Leavenworth, Kansas, on the 5th, and at Huron, Dakota, on the 31st, to 40° at Fort Bennett, Dakota, on the 31st.

Northern slope.—From 33° at Deadwood, Dakota, on the 31st, and at Fort Benton, Montana, on the 20th and 31st, to 44° at Cheyenne, Wyoming, on the 6th.

Middle slope.—From 20° on the summit of Pike's Peak, Colorado, on the 29th and 30th, to 48° at West Las Animas, Colorado, on the 5th.

Southern slope.—From 38° at Coleman City, Texas, on the 1st, and at Fort Concho, Texas, on the 22d, to 39° at Fort Stockston, Texas, on 1st and 21st.

Southern plateau.—From 29° at Fort Grant, Arizona, on the 6th, to 50° at Fort Apache, Arizona, on the 4th, 5th, and 26th.

Middle plateau.—From 35° at Salt Lake City, Utah, on the 27th, to 38° at Pioche, Nebraska, on the 27th.

Northern plateau.—From 33° at Spokane Falls, Washington Territory, on the 6th, to 40° at Fort Missoula, Montana, on the 11th and 12th, and at Eagle Rock, Idaho, on the 21st.

North Pacific.—From 32° at Portland, Oregon, on the 11th and 15th, to 40° at Roseburg, Oregon, on the 29th.

Middle Pacific.—From 26° at San Francisco, California, on the 25th, to 34° at Red Bluff, California, on the 19th, and at Sacramento, on the 27th.

South Pacific.—From 30° at San Diego, California, on the 20th, to 44° at Yuma, Arizona, on the 27th.

FROSTS.

In the various states and territories they were reported as follows:

Alabama.—Green Springs, 22d, 23d; Montgomery, 23d.

Arizona.—Prescott, 9th, 18th, 19th; Fort Apache, 8th, 19th.

Arkansas.—Mount Ida, 22d; Little Rock, 22d; Fort Smith, 22d; Kensett, 22d.

California.—Sacramento, 1st, 2d; Visalia, 15th; Oakland, 18th; Salinas City, 2d, 3d.

Colorado.—West Las Animas, 4th, 26th; Colorado Springs, 10th, 26th; Pike's Peak, 10th, 18th, 20th, 28th, 29th.

Connecticut.—New Haven, 1st; Bethel, 17th, 18th, 19th.

Dakota.—Alexandria, 5th, 11th, 21st; Fort Bennett, 5th, 10th, 12th, 30th; Fort Meade, 10th; Fort Buford, 4th, 7th, 10th; Tobacco Garden, 4th; Yankton, 5th, 21st, 22d; Fort Stevenson, 7th, 10th, 11th, 12th.

Georgia.—Gainesville, 22d, minimum temperature, 34°, the lowest ever observed at this place during May; Madison, 22d, minimum temperature, 31°, coldest May-day ever known at this place; Atlanta, 23d.

Illinois.—Of general occurrence in northern part of the state on the 11th, and throughout the state on 22d, 23d; Elmira, 21st; Rockford, 21st; Morrison, 31st; Collinsville, 31st.

Indiana.—Of general occurrence in the state on 22d and 23d; Wabash, 6th, 11th, 13th, 16th, 24th; Lafayette, 16th, 24th; Indianapolis, 16th; Logansport, 24th; Greenfield, 16th, 31st.

Iowa.—Of general occurrence throughout the state on the 5th, 11th, 21st, 22d, 23d; Nora Springs, 30th; Monticello, 31st; Ames, 31st.

Kansas.—Of general occurrence on 21st, 22d; Holton, 5th, 11th, 31st; Leavenworth, 11th; Clay Centre, 11th, 20th, 29th; Yates Centre, 31st.

Kentucky.—Bowling Green, 22d.

Louisiana.—Shreveport, 22d.

Maine.—Gardiner, 1st, 2d, 5th, 7th, 14th, 16th, 17th, 18th; Orono, 5th, 18th; Portland, 14th; Cornish, 14th, 17th.

Maryland.—Sandy Springs, 1st, 17th, 18th; Woodstock, 30th.

Massachusetts.—Somerset, 1st; Boston, 1st; Westborough, 7th, 14th, 17th, 18th, 19th; Williamstown, 2d, 7th, 12th, 14th, 17th, 18th; Rowe, 12th, 14th, 16th, 17th, 18th; Dudley, 18th.

Michigan.—Of general occurrence in the state on the 1st, 6th, 11th, and 13th; Ionia, 1st, 15th, 23d, 24th; Alpena, 1st, 6th, 12th, 15th, 16th, 17th, 22d, 23d, 29th, 30th; Escanaba, 1st, 15th, 16th; Marquette, 1st to 4th, 9th to 16th, 21st, 22d, 23d; Swartz Creek, 1st, 12th, 16th, 24th; Port Huron, 6th, 16th; Hillsdale, 6th, 31st; Thornville, 1st, 6th, 12th, 15th, 21st; Litchfield, 4th; Traverse City, 10th; Northport, 15th, 16th; Grand Haven, 21st; Lansing, 31st.

Minnesota.—Saint Vincent, 1st, 2d, 3d, 5th, 7th, 8th, 10th to 13th, 28th, 30th; Moorhead, 1st, 2d, 3d, 5th, 7th, 10th to 15th, 21st, 27th to 31st; Saint Paul, 11th, 12th, 21st; Northfield, 11th, 15th, 21st, 22d; Duluth, 11th.

Mississippi.—Vicksburg, 23d; Meridian, 23d; Aberdeen, 23d; Brookhaven, 23d; Columbus, damaging frosts on morning of 23d.

Missouri.—Pierce City, 22d; Archie, 10th, 22d, 31st; Curryville, 22d, 23d; Saint Louis, 22d.

Montana.—Fort Assinniboine, 2d, 3d, 4th, 28th, 29th; Fort Missoula, 3d; Fort Shaw, 3d, 29th; Fort Benton, 3d; Fort Keogh, 4th; New Chicago, 4th, 17th; Fort Ellis, 30th, 31st; Fort Custer, 30th.

Nebraska.—Of general occurrence throughout the state on the 5th and 22d; Red Willow, 3d, 4th, 15th, 30th; DeSoto, 11th; Fremont, 11th; Table Rock, 10th; Nebraska City, 11th; North Platte, 15th, 30th; Peru, 21st; Johnson, 21st.

New Hampshire.—Grafton, 1st, 6th, 7th, 15th, 16th, 17th; Mount Washington, 1st, 2d, 3d, 5th to 18th, 24th, 25th, 28th, 29th, 30th.

New Jersey.—Freehold, 1st, 17th, 18th.

New Mexico.—Santa Fé, 3d, 4th, 8th, 9th, 13th, 17th, 18th, 19th, 26th.

New York.—Of general occurrence on the 12th, 13th, 14th, 17th; Factoryville, 1st, 2d, 18th; Menand station, (near Albany) 1st; Albany, 1st; Rochester, 1st, 16th; White Plains, 9th; Friendship, 16th, 30th; Kiantone, 16th; North Volney, 18th.

North Carolina.—Highlands, 21st, 22d; Charlotte, 23d; Brevard, 22d, 23d, 24th.

Ohio.—Of general occurrence in northern part of the state on 13th, 16th, 17th, 24th; Margaretta, 1st, 7th; Westerville, 6th; Wauseon, 6th, 11th, 12th; Cincinnati, 22d, 23d.

Oregon.—Albany, 14th; Roseburg, 14th.

Pennsylvania.—Of general occurrence in the state on the 17th; at Fallsington on the 1st; Wellsboro', 1st, 12th to 18th, 30th; Grampian Hills, 2d, 12th, 16th; Leetsdale, 12th, 13th, 16th; Pittsburg, 12th, 13th, 16th; Catawissa, 12th; Chambersburg, 16th.

Tennessee.—Murfreesboro', 23d; Nashville, 23d, 24th; Memphis, 22d, 23d; Chattanooga, 23d; Knoxville, 24th.

Utah.—Nephi, 2d, 25th.

Vermont.—Of general occurrence throughout the state on 1st, 7th, 12th, 14th, 16th, 17th; Woodstock, 2d; Strafford, 13th.

Virginia.—Wytheville, 7th; Marion, 12th, 17th; Johnsontown, 18th.

West Virginia.—Helvetia, 2d, 12th, 17th, 24th; Wellsburg, 20th.

Wisconsin.—Of general occurrence on 11th, 21st, 22d, 23d; Embarras, 1st to 4th, 9th to 15th; Franklin, 12th, 13th, 14th, 27th; Columbus, 12th; La Crosse, 15th; Sussex, 21st.

Wyoming.—Cheyenne, 2d, 3d, 4th, 9th, 10th, 14th, 20th, 25th, 26th, 29th, 30th; Fort Washakie, 1st to 6th, 20th, 25th, 26th, 29th, 31st.

The following reports of damage to vegetation by frosts have been received:

Alabama.—Montgomery: light frosts occurred at various points on the 23d, but resulted in no damage to crops.

Georgia.—Augusta, 24th: reports from various points in this state and in South Carolina, state that the young cotton is suffering from the effects of cold weather. Grain and garden crops are generally uninjured, but water-melon vines are seriously damaged.

Illinois.—Noble, Richland county, 22d: a heavy frost and light freeze occurred on the morning of this date. Great fears are entertained for the safety of fruit and vegetables.

Flora, Clay county: a heavy frost occurred on the morning of the 22d. At 5 a. m. the thermometer read 30°. The damage to the fruit crop is considered very heavy, but has not been accurately estimated.

Havana, Mason county, 22d: a heavy frost occurred in this vicinity. The ground froze, and thin ice formed. Serious damage was done to the various kinds of vegetables.

Carrollton, Green county: a heavy frost occurred on the morning of the 22d, and did serious damage in this vicinity.

Jacksonville, Morgan county, 22d: this section was visited by a severe frost on this date. At 5 a. m. the thermometer read 32°, and thin ice formed. All early vegetables and young corn were badly damaged.

Clinton, DeWitt county, 22d: a damaging frost occurred on this date; fruit and all kinds of vegetables were seriously injured. Ice formed to a thickness of one-eighth of an inch.

Pana, Christian county: a heavy frost occurred on the morning of the 22d, seriously damaging tender vegetation.

Waterloo, Montgomery county, 22d: a heavy frost occurred on this date. In many places ice formed to a thickness of one inch. All tender vegetation was killed. The grapes were completely killed; the wheat crop was materially injured, and nearly all the corn crop will have to be re-planted.

Galena, Jo Daviess county, 22d: this section was visited by a severe frost, which did great damage to fruit and vegetables. Ice formed to a considerable thickness.

Windsor, Shelby county: a heavy frost occurred on the morning of the 22d, causing considerable damage to fruit and vegetables.

Ridge Prairie, Saint Clair county: a heavy frost occurred on the morning of the 22d. Ice formed to a thickness of one-eighth of an inch, and the ground was considerably frozen.

Kemper, Jersey county: a severe frost occurred on the morning of the 22d. Ice formed to a thickness of one-fourth inch. Corn and garden vegetables suffered seriously.

Nokomis, Montgomery county, 22d: the heavy frost of last night killed all early vegetables.

Springfield: the frost of the 22d was very damaging to growing crops in central Illinois. In Sangamon county most of the corn will have to be re-planted. Fruit and vegetables were also injured.

Tuscola, Douglas county: the frost which occurred on the 22d, was the severest ever experienced in this county at this season.

White Hall, Greene county: the frost of the 22d was unusually severe for the season. Early vegetables were killed, and it is feared the wheat suffered serious injury.

Greenville, Bond county: a severe frost occurred on the 22d, damaging vegetables and corn. Ice formed one-fourth of an inch in thickness.

Astoria, Fulton county: a very damaging frost occurred here on the 22d. The grape crop in this section was ruined, and other vegetation suffered serious injury.

Cairo, 22d: the temperature fell to 38° on this date, which is the lowest, with one exception (37° in 1875), shown by the records of the Signal Service. In 1875, the minimum temperature occurred three weeks earlier than in the present year.

Maryland.—Sandy Springs, Montgomery county, 17th: the frost of this date caused damage to vegetation in lowlands.

Missouri.—Mine La Motte, Madison county, 22d: a heavy frost occurred on the morning of this date, causing much damage in this locality. Ice formed to a thickness of one-fourth of an inch.

Bonne Terre, Saint Francois county: the heavy frost of the 22d caused serious damage to tender vegetation.

Lebanon, Laclede county: a heavy frost occurred on the 22d. No damage was done to fruit, but young vegetables were seriously injured.

Warrenton, Warren county: tender plants and fruit were injured in this locality by the frost of the 22d.

Pierce City, Lawrence county: the frost of the 22d did great damage to gardens, and it is feared that in the valleys wheat and corn were damaged.

Fredricktown, Madison county, 22d: a heavy frost occurred on this date, seriously injuring garden vegetables.

Springfield: a heavy frost occurred here on the 22d, which seriously damaged garden vegetables.

Curryville, Pike county: the frost of the 22d caused much damage to crops in this locality.

Archie, Cass county: vegetation was seriously injured by the frost of the 22d.

Nebraska.—Lincoln, Lancaster county: slight frosts occurred in this vicinity about the 21st and 22d, but resulted in no serious damage.

North Carolina.—Lenoir, Caldwell county, 23d: the frost of this date killed all tender vegetation, and in some places the cotton crop was injured.

Charlotte: a light frost occurred on the morning of the 23d, causing slight damage to vegetation in the surrounding country.

Wisconsin.—La Crosse, 21st: considerable damage was done to vegetation by the frost of this date.

ICE.

Ice formed in the various states and territories as follows:

Colorado.—Denver, 3d; Fort Garland, 26th.

Connecticut.—Bethel, 29th, 30th.

Dakota.—Fort Bennett, 10th.

Illinois.—Rockford, 21st, 22d; Swanwick, 22d; Mattoon, 22d, 23d. Other instances of ice formation in this state are mentioned in connection with the heavy frosts of the 22d.

Iowa.—Dubuque, 21st.

Maine.—Gardiner, 1st.

Maryland.—Sandy Springs, 17th.

Massachusetts.—Rowe, 12th.

Michigan.—Ionia, 1st, 6th, 11th; Northport, 10th.

Minnesota.—Minneapolis, 22d; Duluth, 11th.

Nebraska.—Genoa, 5th.

New York.—Menand's Station, (near Albany), 1st; Friendship, 17th.

North Carolina.—Lenoir, 23d.

Ohio.—Ruggles, 13th; Wauseon, 13th; Cleveland, 17th.

Pennsylvania.—Pittsburg, 17th.

Vermont.—Woodstock, 14th.

West Virginia.—Wellsburg, 20th.

Wisconsin.—La Crosse, 21st.

PRECIPITATION.

[*Expressed in inches.*]

The distribution of rainfall over the United States and Canada, for the month of May, 1883, as determined from observations taken at more than six hundred stations, is exhibited on chart iv.

In the first column of the following table is given the average May rainfall in the various districts for several years; in the second column is given the average for May, 1883; and the third column shows the excess or deficiency of May, 1883, as compared with the average of previous years:

Average precipitation for May, 1883.

Districts.	Average for May. Signal-Service observations.		Comparison of May, 1883, with the average for several years.
	For several years.	For 1883.	
	Inches.	*Inches.*	*Inches.*
New England	3.36	4.77	1.41 excess.
Middle Atlantic states	2.96	2.38	0.58 deficiency.
South Atlantic states	3.22	6.13	2.91 excess.
Florida peninsula	3.50	3.33	0.17 deficiency.
East Gulf	4.40	4.37	0.03 deficiency.
West Gulf	5.00	3.50	1.50 deficiency.
Rio Grande valley	4.06	1.13	2.93 deficiency.
Tennessee	3.74	4.28	0.54 excess.
Ohio valley	3.85	4.62	0.77 excess.
Lower lakes	2.77	5.79	3.02 excess.
Upper lakes	3.64	4.49	0.85 excess.
Extreme northwest	3.33	1.68	1.65 deficiency.
Upper Mississippi valley	4.49	5.17	0.68 excess.
Missouri valley	4.40	7.43	3.03 excess.
Northern slope	2.79	2.75	0.04 deficiency.
Middle slope	3.34	4.43	1.09 excess.
Southern slope	2.54	4.45	1.91 excess.
Northern plateau	1.02	2.01	0.99 excess.
Middle plateau	1.34	0.65	0.69 deficiency.
Southern plateau	0.22	0.38	0.16 excess.
North Pacific coast	2.38	3.24	0.86 excess.
Middle Pacific coast	0.78	3.11	2.33 excess.
South Pacific coast	0.20	1.00	0.80 excess.
Mount Washington, N. H.	6.39	9.10	2.71 excess.
Pike's Peak, Col.	4.27	2.80	1.47 deficiency.

In Florida, the eastern Gulf states, and northern slope, the monthly rainfall differs but slightly from the May normal. In the middle Atlantic states, extreme northwest, middle plateau, western Gulf states, and Rio Grande valley, deficiencies, ranging from 0.58 to 2.93, have occurred. In all other parts of the country the rainfall is above the average for May. In the lower lake region and Missouri valley, the excess over the average exceeds 3.00; in the south Atlantic states it is 2.91; and in the southern slope, 1.91. A noteworthy feature of the distribution of rainfall for May, is the unusually large excess over the average, in California, where the precipitation has been greater than for any corresponding month since the establishment of the Signal-Service stations. In northern California, the rainfall was about four times the average amount, or an excess of 2.33; and in southern California, an excess of 0.80 occurred, the monthly precipitation being five times as great as the average for May.

The general distribution of rainfall during the month of May, and the districts of maximum departures from the May normal of each year since 1873, are as follows:

Districts.	Maximum departures.	Year.	Remarks.
		1873	Deficient in the Saint Lawrence valley, lower lakes, and Ohio Valley; excessive in Iowa, Missouri, eastern Kansas, eastern Tennessee, and along the Atlantic sea-board, except near Portland, Maine, and Savannah, Georgia; very large excesses occurred in the Gulf states.
Lower Mississippi valley	— 3.50	1874	Excessive in the Saint Lawrence valley, New England, and south Atlantic states; deficient in all other parts of the country.
East Gulf	— 2.93		
Ohio valley	— 2.79		
Saint Lawrence valley	+ 1.30		
New England	+ 1.13		
East Gulf	— 2.32	1875	Excessive over the northern districts from the upper Mississippi valley to the Saint Lawrence valley, and also in the south Atlantic states: deficient in all other districts.
West Gulf	— 2.14		
Tennessee	— 1.78		
Saint Lawrence valley	+ 1.21		
West Gulf	+ 2.65	1876	Excessive in the middle Atlantic and Gulf states, Tennessee, upper Mississippi valley, upper lake region, and in Minnesota; in the other districts small deficiencies occurred, varying from 0.05 to 0.95.
Tennessee	+ 2.50		
Upper Mississippi valley	+ 1.65		
Ohio valley	— 0.95		
Lower Missouri valley	+ 2.80	1877	Excessive in the upper Mississippi and Missouri valleys and in Minnesota: deficient in all districts east of the Mississippi river, and also in the west Gulf states. On the Pacific coast, a slight excess occurs at Portland, Oregon, a slight deficiency at Santa Fé, New Mexico, and normal at San Diego, California.
Minnesota	+ 2.30		
Upper lakes	— 2.22		
Saint Lawrence valley	— 2.15		
New England	— 1.95		
West Gulf	+ 1.79	1878	Normal in Minnesota, the lake region, and south Atlantic states; excessive in the middle Atlantic and Gulf states, the upper Mississippi and lower Missouri valleys; deficient in New England, in the Saint Lawrence, Ohio, and upper Missouri valleys, Tennessee, and California.
Middle Atlantic states	+ 1.16		
Missouri valley	+ 1.13		
New England	— 1.27		
Portland, Oregon	+ 4.63	1879	Excessive in Minnesota, the upper Mississippi valley, Tennessee, and on the Pacific coast: deficient in the Gulf and Atlantic states, the Saint Lawrence, Ohio, and Missouri valleys, and also in the lake region.
Minnesota	+ 2.95		
New England	— 2.45		
Middle Atlantic States	— 1.95		
Saint Lawrence valley	— 1.78		
Florida	+ 3.14	1880	Excessive in the Gulf states, Florida, and from Minnesota to the Saint Lawrence valley; normal in Tennessee and in the upper Mississippi valley: deficient from New England to the south Atlantic states, in the Ohio and Missouri valleys, and in California.
East Gulf	+ 2.50		
Ohio valley	— 1.85		
South Atlantic states	— 1.71		
Middle Atlantic states	— 1.57		
New England	+ 2.04	1881	Excessive in the Missouri valley, New England, and west Gulf states; deficient in all other districts except normal in southern California.
West Gulf	+ 1.64		
South Atlantic states	— 2.27		
East Gulf	— 2.22		
North Pacific	— 1.66		
Ohio valley	+ 4.57	1882	Deficient from the eastern Rocky mountain slope to the Pacific coast, except a slight excess in Arizona and southern California; excessive in the Rio Grande valley, western Gulf states, extreme northwest, and in all districts east of the Mississippi river, except the south Atlantic states; normal in Florida.
Tennessee	+ 2.98		
Lower lakes	+ 2.75		
Middle Atlantic states	+ 2.15		
South Atlantic states	— 1.28		
Middle slope	— 1.19		

DEVIATIONS FROM AVERAGE PRECIPITATION.

The departures exhibited by the reports from the regular Signal-Service stations are shown in the table of average precipitation for May, 1883. Voluntary observers report the following notes in connection with this subject:

Illinois.—Mattoon, Coles county: monthly rainfall, 4.14, or 0.70 below the May average of the last four years.